

What is claimed is:

1. An apparatus for use as a sensor comprising  
a plurality of piezoelectric elements arranged in a stack, each of said piezoelectric elements having an output,  
a rectification block on each said output of said piezoelectric elements,  
a capacitive element connected to each of said rectification blocks to accumulate charge from said rectification block, and  
a sensor output connected to said capacitive element to supply a signal from said capacitive element.
2. The apparatus of claim 1, further comprising a switching device connected to an output of said capacitive element.
3. The apparatus of claim 1, wherein said rectification block is selected from a group consisting of a full-wave rectification block and a half-wave rectification block.
4. The apparatus of claim 1, comprising three or more stacked piezoelectric elements.
5. The apparatus of claim 1, further comprising a signal phase delay element provided between said rectification block and said capacitive element.
6. The apparatus of claim 5, wherein said signal phase delay element comprises an inductor.
7. The apparatus of claim 2, wherein said switching device comprises a field effect transistor (FET).
8. The apparatus of claim 2, wherein said switching device comprises multiple field effect transistors (FETs).
9. The apparatus of claim 2, wherein said switching device comprises a bipolar transistor.
10. The apparatus of claim 2, wherein said switching device comprises multiple bipolar transistors.
11. The apparatus of claim 2, wherein said switching device comprises a relay or microelectromechanical systems (MEMS) relay.
12. The apparatus of claim 2, wherein said switching device comprises an available timer circuit.
13. The apparatus of claim 2, wherein said switching device comprises a direct micro-controller input.

14. The apparatus of claim 1, wherein said apparatus comprises a means for detecting changes in position from gravitational effects on a structure rotating at an angle to the surface of a significant gravity source.
15. The apparatus of claim 14, wherein said structure comprises a wheel.
16. The apparatus of claim 14, wherein said angle comprises approximately 90 degrees.
17. The apparatus of claim 14, wherein said gravity source comprises the earth.
18. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in position from movement of a structure the apparatus is mounted upon.
19. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in movement of a structure placed upon the apparatus.
20. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in frequency or amplitude available from a local electrical field.
21. The apparatus of claim 20, wherein said electrical field comprises a field in the approximate range of 50 to 60 Hz.
22. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in frequency or amplitude available from low power sound energy.
23. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in frequency or amplitude available from ultrasound energy.
24. The apparatus of claim 1, wherein one or more of said rectification blocks comprises a circuit board.
25. The apparatus of claim 1, wherein one or more of said capacitive elements comprises a capacitor.
26. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in ambient power available from RF spectrum energy fields.
27. The apparatus of claim 1, wherein said apparatus comprises means for detecting changes in magnetic fields.
28. A method of manufacturing a sensor comprising
  - arranging a plurality of piezoelectric elements into a stack,
  - connecting a plurality of rectification blocks, such that there is at least a rectification block on an output of each of said piezoelectric elements,
  - arranging a plurality of capacitive elements to accumulate charge from said rectification blocks, and

providing a signal output for providing a signal from said plurality of capacitive elements.

29. The method of claim 28, further comprising connecting a switching device to an output of said plurality of capacitive elements.

30. The method of claim 28, wherein said step of arranging comprises providing said plurality of piezoelectric elements arranged in a stack according to size.

31. The method of claim 28, wherein one or more of said rectification blocks is selected from a group consisting of a full-wave rectification block and a half-wave rectification block.

32. The method of claim 28, comprising arranging three or more stacked piezoelectric elements.

33. The method of claim 28, further comprising providing a signal phase delay element provided between one or more of said plurality of rectification blocks and one or more of said plurality of capacitive elements.

34. The method of claim 33, wherein said signal phase delay element comprises an inductor.

35. The method of claim 29, wherein said switching device comprises a FET.

36. The method of claim 29, wherein said switching device comprises multiple FETs.

37. The method of claim 29, wherein said switching device comprises a bipolar transistor.

38. The method of claim 29, wherein said switching device comprises multiple bipolar transistors.

39. The method of claim 29, wherein said switching device comprises a relay or MEMs relay.

40. The method of claim 29, wherein said switching device comprises an available timer circuit.

41. The method of claim 29, wherein said switching device comprises a direct micro-controller input.

42. The method of claim 28, further comprising sensing changes in position from gravitational effects on a structure rotating at an angle to the surface of a significant gravity source.

43. The method of claim 42, wherein said structure comprises a wheel.

44. The method of claim 42, wherein said angle comprises approximately 90 degrees.

45. The method of claim 42, wherein said gravity source comprises the earth.

46. The method of claim 28, further comprising sensing changes in position of a structure the apparatus is mounted upon.
47. The method of claim 28, further comprising sensing changes in position of a structure placed upon the apparatus.
48. The method of claim 28, further comprising sensing changes in frequency or strength from a heartbeat.
49. The method of claim 48, wherein said heartbeat comprises a human heartbeat.
50. The method of claim 28, further comprising sensing changes in frequency or strength available from a local electrical field.
51. The method of claim 50, wherein said electrical field comprises a field in the approximate range of 50 to 60 Hz.
52. The method of claim 28, further comprising sensing changes in frequency or strength available from low power sound energy.
53. The method of claim 28, further comprising sensing changes in frequency or strength available from ultrasound energy.
54. The method of claim 28, further comprising incorporating circuit board technology in said charger.
55. The method of claim 28, wherein one or more of said capacitive elements comprises a capacitor.
56. The method of claim 28, further comprising sensing changes in ambient power available from RF spectrum energy fields.
57. The method of claim 28, further comprising sensing changes in magnetic fields.